IN THE CLAIMS

8. (Currently Amended) A method for etching a silicon wafer using XeF_2 not disassociated by plasma generating means, comprising steps of:

(a) etching a silicon wafer using an etching apparatus comprising a loading chamber for loading XeF_2, an expansion chamber for collecting sublimated XeF_2 from the said loading chamber, and an etching chamber for etching using XeF_2 not disassociated by plasma generating means supplied from the said expansion chamber;

(b) eliminating air moisture in each chamber to prevent formation of HF by injecting nitrogen to the loading chamber, the expansion chamber ~~or the~~ and the etching chamber, and exhausting the injected nitrogen therefrom prior to the said step (a); and

(c) controlling the internal pressure of the loading chamber at a level between sublimation pressure of XeF_2 and atmospheric pressure to prevent sublimation of the residual XeF_2 in the loading chamber after the said step (a).

9. (Original) The method for etching a silicon wafer using XeF_2 as claimed in claim 8, wherein the XeF_2 gas is injected on the surface of the wafer with a viscous laminar downflow using an injector having a predefined shape provided in the etching chamber for uniform etching of the wafer in step (a).

11. (Original) The method for etching a silicon wafer using XeF_2 as claimed in claim 8, including weighing the residual XeF_2 gas in the loading chamber at any time during the step (a) to estimate the remaining time for performing the etching step with the residual XeF_2.

12. (Currently Amended) A method for etching a silicon wafer using XeF_2 not disassociated by plasma generating means, which method comprises:

(a) eliminating air moisture in a loading chamber, an expansion chamber, and an etching chamber to prevent formation of HF by injecting nitrogen to the loading chamber, the expansion chamber ~~or the~~ and the etching chamber and exhausting the injected nitrogen therefrom;

(b) thereafter loading XeF_2 not disassociated by plasma generating means in said loading chamber;

(c) collecting sublimated XeF_2 from said loading chamber in said expansion chamber;

(d) etching said silicon wafer in an etching chamber using XeF_2 supplied from said expansion chamber; and

(e) controlling internal pressure of the loading chamber at a level between sublimation pressure of XeF_2 and atmospheric pressure to prevent sublimination of residual XeF_2 in the loading chamber.

13. (Original) A method for etching as set forth in claim 12 including injecting said XeF_2 gas on a surface of said silicon wafer with a viscous laminar downflow.

REMARKS

The Office Action dated 4/7/03 has been fully considered by the Applicant.

The rejection of claims 8 and 12 under 36 USC 103(a) as unpatentable over Patel et al (US Patent No. 6,290,864 B1) in view of Cannella (US Patent No. 4,889,609)and McQuarrie et al (JP 10-317169 A) and the rejection of claim 11 under 35 USC 103(a) as unpatentable over Patel etl al in view of Sinha et al (US Patent No. 6,123,765) as now amended is respectfully traversed.

Claims 8 and 12 have been amended and claims 9-11 are unchanged. Applicant hereby requests that the Examiner's rejection of claims 8, 9and 11-13 be reconsidered in view of the amendments made herein.

The telephone conference with Examiner Hassanzadeh is gratefully acknowledged. The Examiner agreed that Applicant should be permitted to swear behind the Patel et al reference. This is to confirm that Patel et al does not claim the same invention as Applicant.

Moreover, the suggested changes to the claims discussed with the Examiner have been incorporated herein.

It is believed that the application is in condition for allowance and such action is earnestly solicited. If any further issues remain, a telephone conference with the Examiner is requested.

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